HVA-G1

SERVICE MANUAL

AEP Model

SONY
POWER
ON/OFF
CAMERA
AC POWER ADAPTOR HVA-G1

SPECIFICATIONS

Power requirements	220 V AC, 50 Hz
Power cosumption	15 W
Output voltage	Camera output 6.8 V, 800 mA, RFU DC output 5 V, 50 mA
Camera input/output connector	12-pin, conforms to 8 mm video specifications
Video output jack	Phono jack × 1: 1 Vp-p, 75 ohms unbalanced sync negative
Audio output jack	Phono jack × 3 (stereo and monaural): −6 dBs (at −15 dBs input) at output impedance less than 1 kilohm
Dimensions	Approx. 80 × 58 × 147 mm ($3^{1}/_{4} \times 2^{3}/_{8} \times 5^{7}/_{8}$ in.) (w/h/d)
Weight	Approx. 650 g (1 lb 7 oz)

Design and specifications are subject to change without notice.

MICROFILM

AC POWER ADAPTOR

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

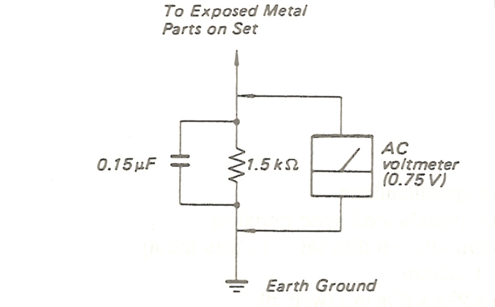


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servising to qualified personnel only.

The HVA-G1 AC power adaptor can be used as follows:
- To supply power to the CCD-G1E video camera
- To connect the CCD-G1E video camera to the VTR without the camera connector (12-pin)

Notes on Use

- This AC power adaptor operates on 220 V AC.
- Unplug the unit from the mains outlet when not in use. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if it has been dropped or damaged.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- Be careful since the unit gets hot during operation.
- Do not place the unti in locations where it is;
  —Extremely hot or cold
  —Dusty or dirty
  —Very humid

SECTION 1
GENERAL

Connection and Use

Before connection, turn off the power of the equipment to be used.

Connecting the VTR Equipped with the Video/Audio Input Jacks (Illus. A)

1 Connect the camera connector on the CCD-G1E video camera and the CAMERA connector on the HVA-G1 with the connecting cable supplied with the CCD-G1E or CCK-G1 extension cord (optional).

2 Connect the VIDEO/AUDIO OUT jacks on the HVA-G1 and the video/audio input jacks on the VTR with the appropriate connecting cable (optional) (Illus. A B).
   - [a] VMC-810S/820S: to phono and BNC-type connectors (stereo)
   - [b] Commercially available cord: to a 6-pin DIN connector
   - [c] VMC-2106S: to a 21-pin connector (EUROCONNECTOR)
   - [d] VMC-910MS/920MS: to phono and BNC-type connectors (monaural)

3 Connect the mains cord to a mains outlet.

4 Press the POWER switch to turn on the HVA-G1. The lamp lights up.

Notes
- Even if the stereo type VTR is connected, the recorded sound is monaural.
- When the monaural type VTR is connected, use the following connecting cables (optional) according to the VTR to be connected. (Illus. C)
   - [a] VMC-710M/720M: to phono and BNC-type connectors (monaural)
   - [b] VMC-262M: to a 6-pin DIN connector
   - [c] VMC-2104M: to a 21-pin connector (EUROCONNECTOR)

Connecting the VTR without the Video/Audio Input Jacks (Illus. D)

1 Connect the camera connector on the CCD-G1E video camera and the CAMERA connector on the HVA-G1 with the connecting cable supplied with the CCD-G1E or CCK-G1 extension cord (optional).

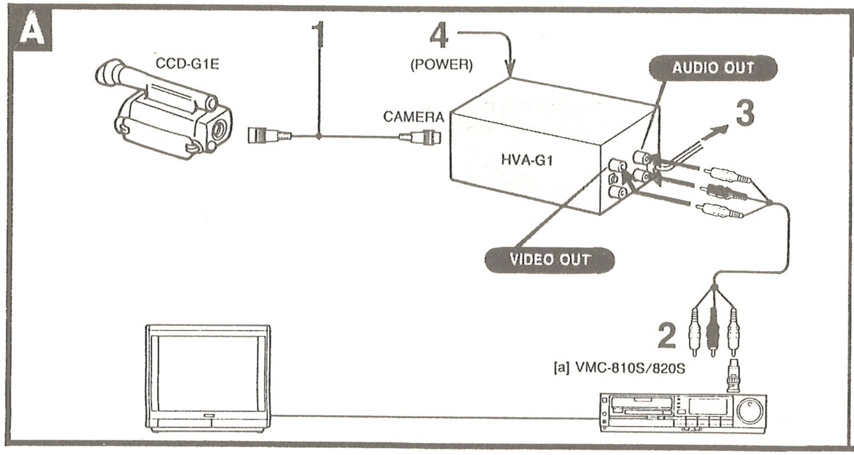
2 Connect the VIDEO/AUDIO/DC OUT jacks on the HVA-G1 and the antenna input connector on the VTR with the RFU-89EA/ASA and the antenna selector.

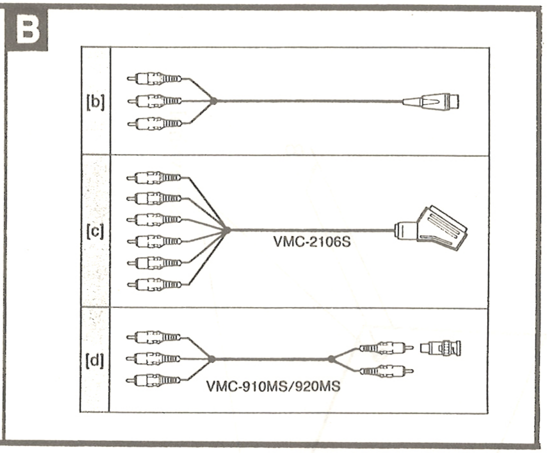
3 Connect the mains cord to a mains outlet.

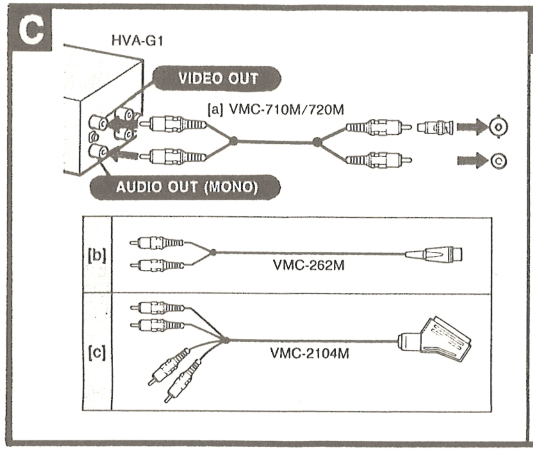
4 Press the POWER switch to turn on the HVA-G1. The lamp lights up.

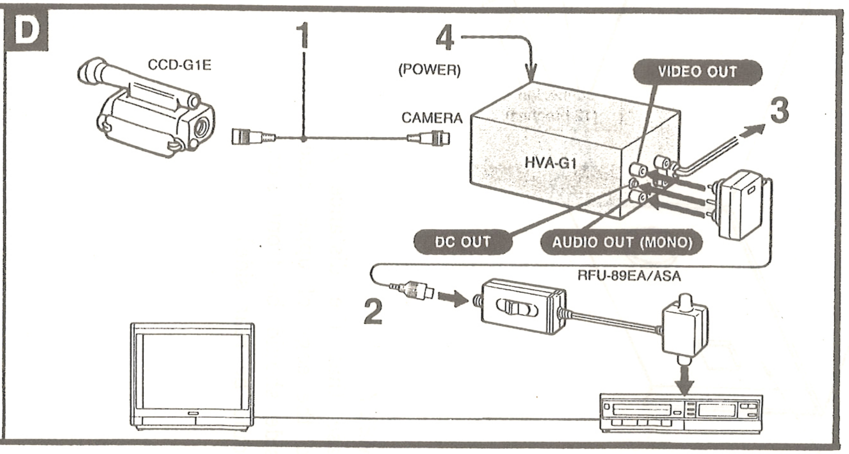
Connecting to the TV or Colour Monitor (Illus. E)

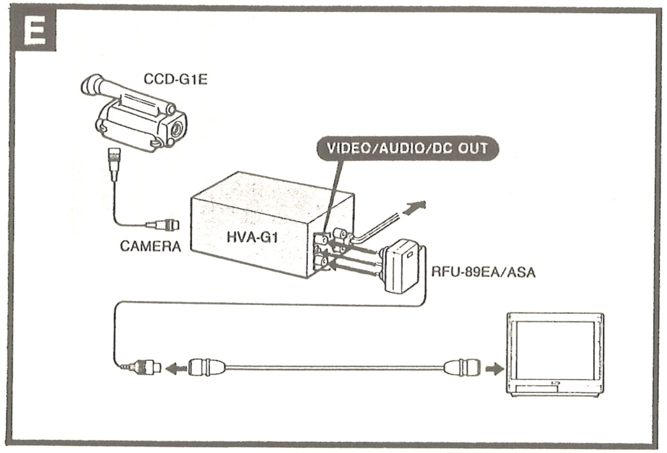
The picture being shot with CCD-G1E can be viewed.
To install the video camera away from the TV or monitor, use a 75-ohm coaxial cable (optional).


A
CCD-G1E
1
4
(POWER)
CAMERA
HVA-G1
AUDIO OUT
3
VIDEO OUT
2
[a] VMC-810S/820S


B
[b]
[c]
VMC-2106S
[d]
VMC-910MS/920MS


C
HVA-G1
VIDEO OUT
[a] VMC-710M/720M
AUDIO OUT (MONO)
[b]
VMC-262M
[c]
VMC-2104M

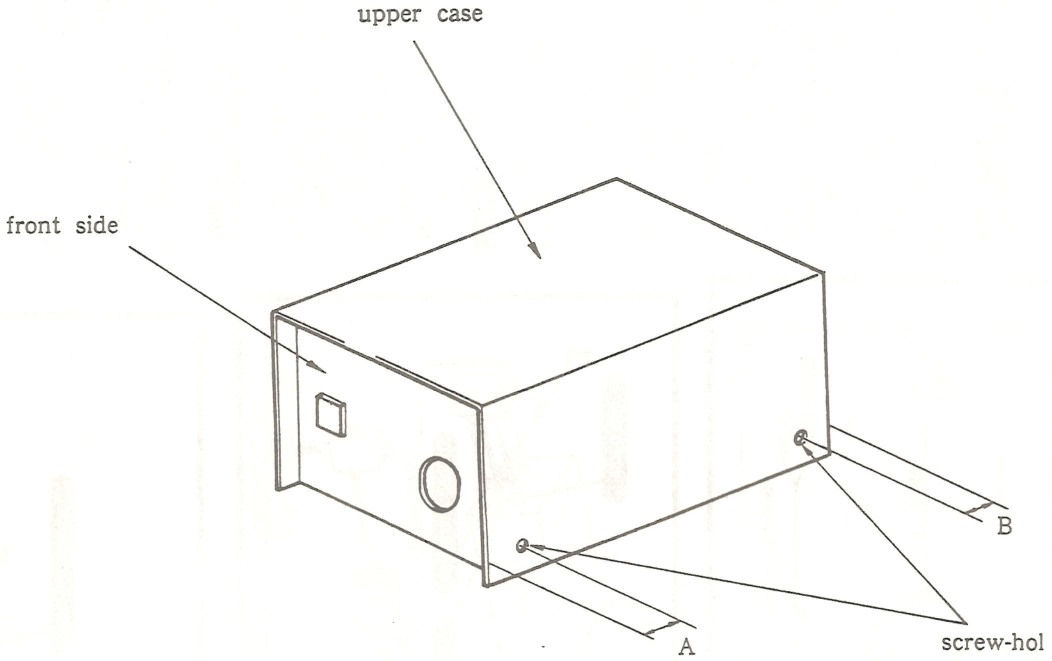

D
CCD-G1E
1
4
(POWER)
CAMERA
HVA-G1
VIDEO OUT
3
DC OUT
AUDIO OUT (MONO)
RFU-89EA/ASA
2


E
CCD-G1E
VIDEO/AUDIO/DC OUT
CAMERA
HVA-G1
RFU-89EA/ASA

SECTION 2
DISASSEMBLY

2-1. UPPER CASE REMOVAL

Remove two screws on the both side of upper case, and remove the upper case.

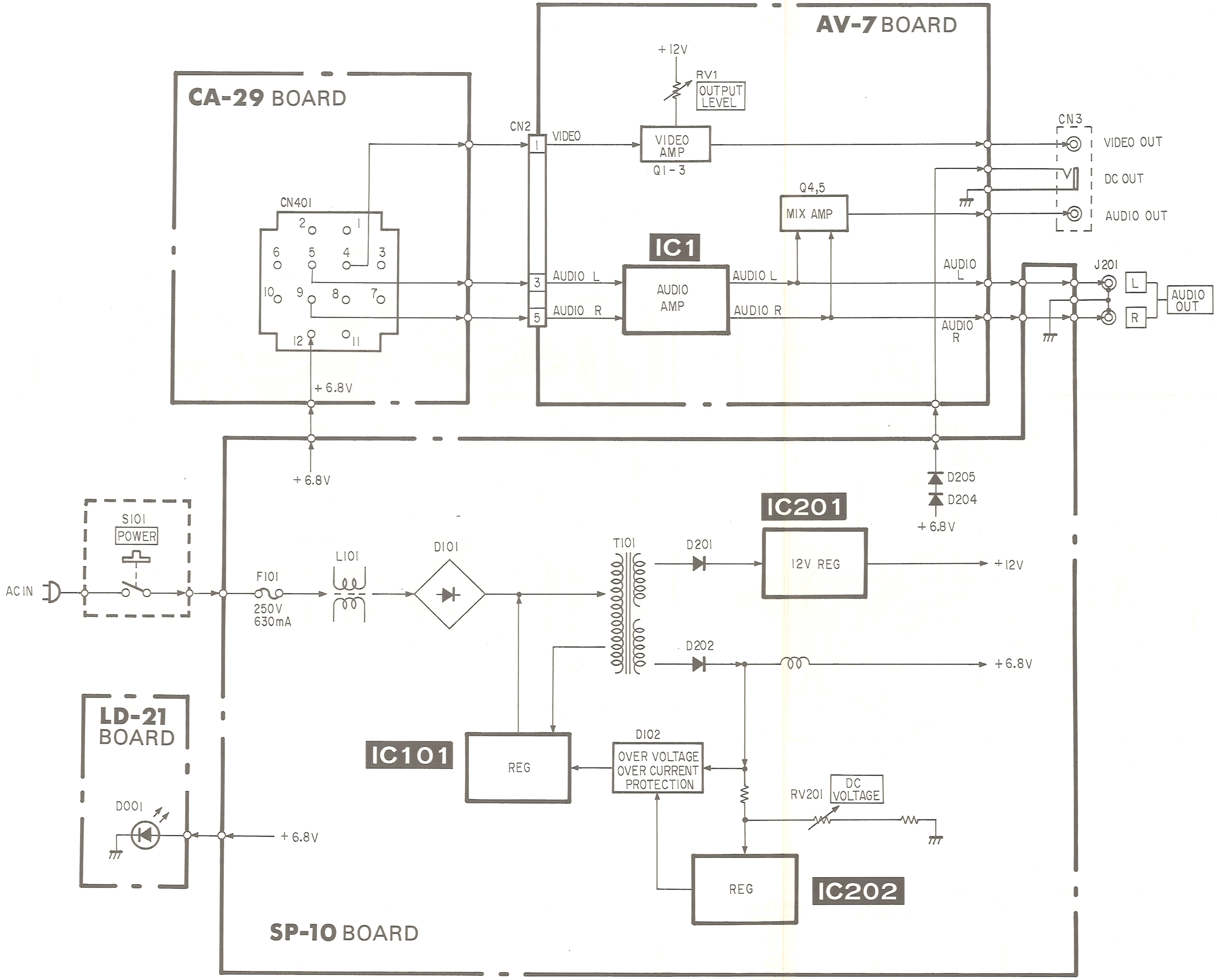


2-2. UPFER CASE REASSEMBLY

The side of upper case that the distance A between screw-hole and the edge of upper case is longer than other side should be front side. (distance B shorter should be rear side)

SECTION 3 DIAGRAMS

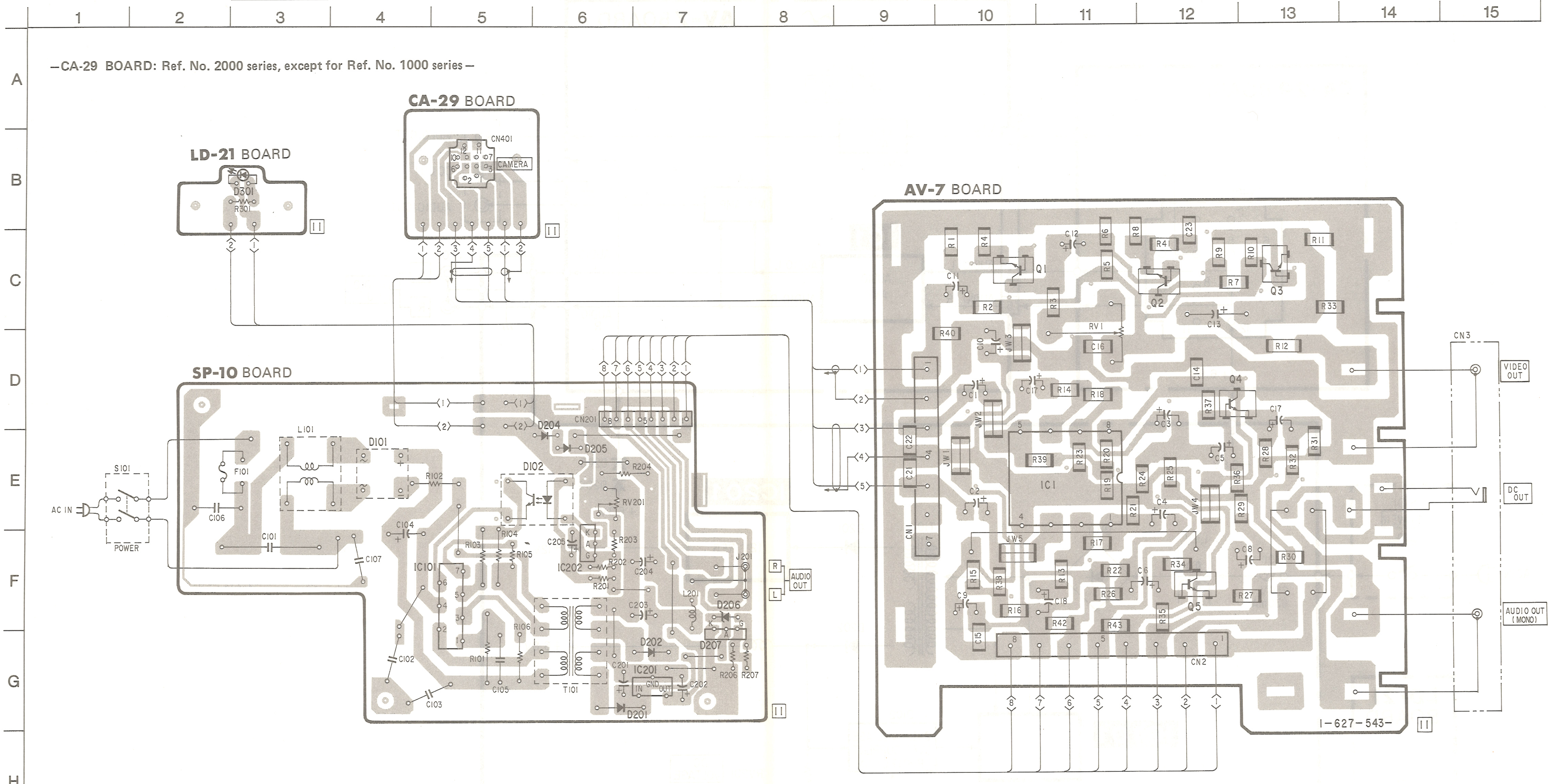
3-1. FRAME SCHEMATIC DIAGRAM


AV-7 BOARD
CA-29 BOARD
SP-10 BOARD
LD-21 BOARD
+12V
RV1
OUTPUT LEVEL
CN2
VIDEO
VIDEO AMP
Q1-3
CN3
VIDEO OUT
DC OUT
AUDIO OUT
Q4,5
MIX AMP
CN401
1
2
3
4
5
6
7
8
9
10
11
12
IC1
AUDIO AMP
AUDIO L
AUDIO R
AUDIO L
AUDIO R
J201
L
R
AUDIO OUT
+6.8V
+6.8V
D205
D204
+6.8V
IC201
12V REG
+12V
S101
POWER
AC IN
F101
250V
630mA
L101
D101
T101
D201
D202
+6.8V
IC101
REG
D102
OVER VOLTAGE
OVER CURRENT
PROTECTION
RV201
DC VOLTAGE
IC202
REG
D001
+6.8V

3-2. PRINTED WIIRNG BOARDS AND SCHEMATIC DIAGRAMS

LD-21 (LED) **CA-29** (CAMERA INPUT) **SP-10** (POWER, AUDIO OUTPUT) **AV-7** (VIDEO/AUDIO AMP AND OUTPUT)

—CA-29 BOARD: Ref. No. 2000 series, except for Ref. No. 1000 series—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A
B
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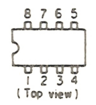
F
G
H
LD-21 BOARD
D301
R301
CA-29 BOARD
CN401
CAMERA
SP-10 BOARD
AC IN
S101
POWER
F101
C106
C101
L101
D101
R102
C107
C104
IC101
R103
R104
R105
C102
C103
R101
C105
R106
T101
D102
D204
D205
CN201
R204
RV201
C205
R203
R202
R201
IC202
C204
C203
J201
R
L
AUDIO OUT
L201
D206
D202
D207
C201
IC201
IN
GND
OUT
C202
R206
R207
D201
AV-7 BOARD
R1
R4
C12
R6
R8
R41
C23
R9
R10
R11
Q1
R5
Q2
R7
Q3
C11
R2
R3
RV1
R33
C13
R40
C10
JW3
C16
R12
CN3
VIDEO OUT
C14
Q4
C1
C17
R14
R18
R37
C7
JW2
C3
C22
JW1
R39
R23
R20
R28
R32
R31
C5
C21
R19
R24
R25
R36
IC1
C2
C4
R21
JW4
R29
DC OUT
CN1
JW5
R17
C8
R30
R15
R38
R13
R22
C6
R34
C9
C18
R26
R27
R16
R42
R43
R35
Q5
AUDIO OUT (MONO)
C15
CN2
1-627-543-

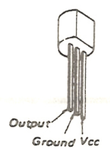
● ○— : indicates a lead wire mounted on the component side.
● ●— : indicates a lead wire mounted on the printed side.
● ▨ : soldering side.

3-3. Semiconductor Lead Layouts

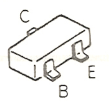
NJM2904D


8 7 6 5
1 2 3 4
(Top view)

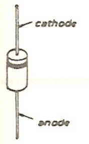
NJM78L12A


Output
Ground Vcc

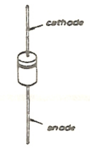
2SC2412K
2SC2757-T32



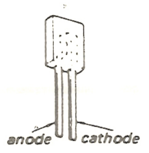
ERB43-08
RD9.1FB2


cathode
anode

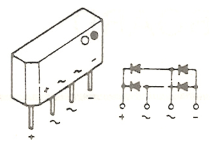
ERB81-004


cathode
anode

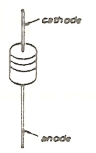
PG5531KX


anode
cathode

S1VB40

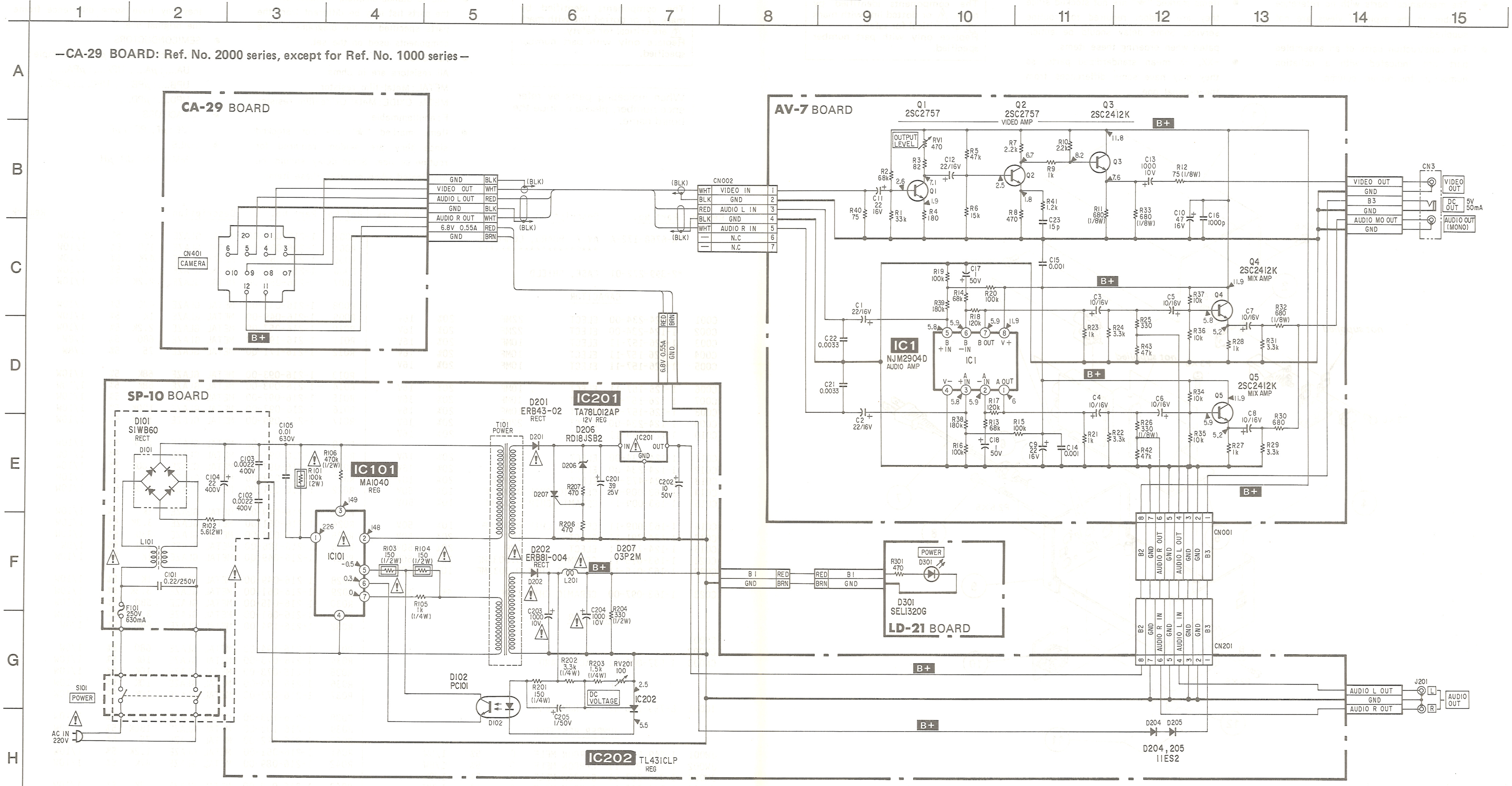


11ES2


cathode
anode

LD-21 (LED) **CA-29** (CAMERA INPUT) **SP-10** (POWER, AUDIO OUTPUT) **AV-7** (VIDEO/AUDIO AMP AND OUTPUT)

—CA-29 BOARD: Ref. No. 2000 series, except for Ref. No. 1000 series—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D
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F
G
H
CA-29 BOARD
CN401 CAMERA
B+
GND
VIDEO OUT
AUDIO L OUT
GND
AUDIO R OUT
6.8V 0.55A
GND
BLK
WHT
RED
BLK
WHT
RED
BRN
CN002
VIDEO IN
GND
AUDIO L IN
GND
AUDIO R IN
N.C
N.C
AV-7 BOARD
Q1 2SC2757
Q2 2SC2757 VIDEO AMP
Q3 2SC2412K
OUTPUT LEVEL RV1 470
IC1 NJM2904D AUDIO AMP
Q4 2SC2412K MIX AMP
Q5 2SC2412K MIX AMP
CN3
VIDEO OUT
GND
B3
GND
AUDIO MO OUT
GND
DC OUT 5V 50mA
AUDIO OUT (MONO)
SP-10 BOARD
D101 S1WB60 RECT
IC101 MA1040 REG
L101
F101 250V 630mA
S101 POWER
AC IN 220V
T101 POWER
D201 ERB43-02 RECT
IC201 TA78L012AP 12V REG
D206 RD18JSB2
D202 ERB81-004 RECT
D207 03P2M
L201
D102 PC101
IC202 TL431CLP REG
DC VOLTAGE
RV201 100
CN001
CN201
B2
GND
AUDIO R OUT
GND
AUDIO L OUT
GND
GND
B3
AUDIO R IN
AUDIO L IN
LD-21 BOARD
POWER D301
R301 470
D301 SEL1320G
B1
GND
RED
BRN
D204, 205 11ES2
J201
AUDIO L OUT
GND
AUDIO R OUT
AUDIO OUT

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF. 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- ▭ : nonflammable resistor.
- ☐ : panel designation.
- ☐ : adjustment for repair.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

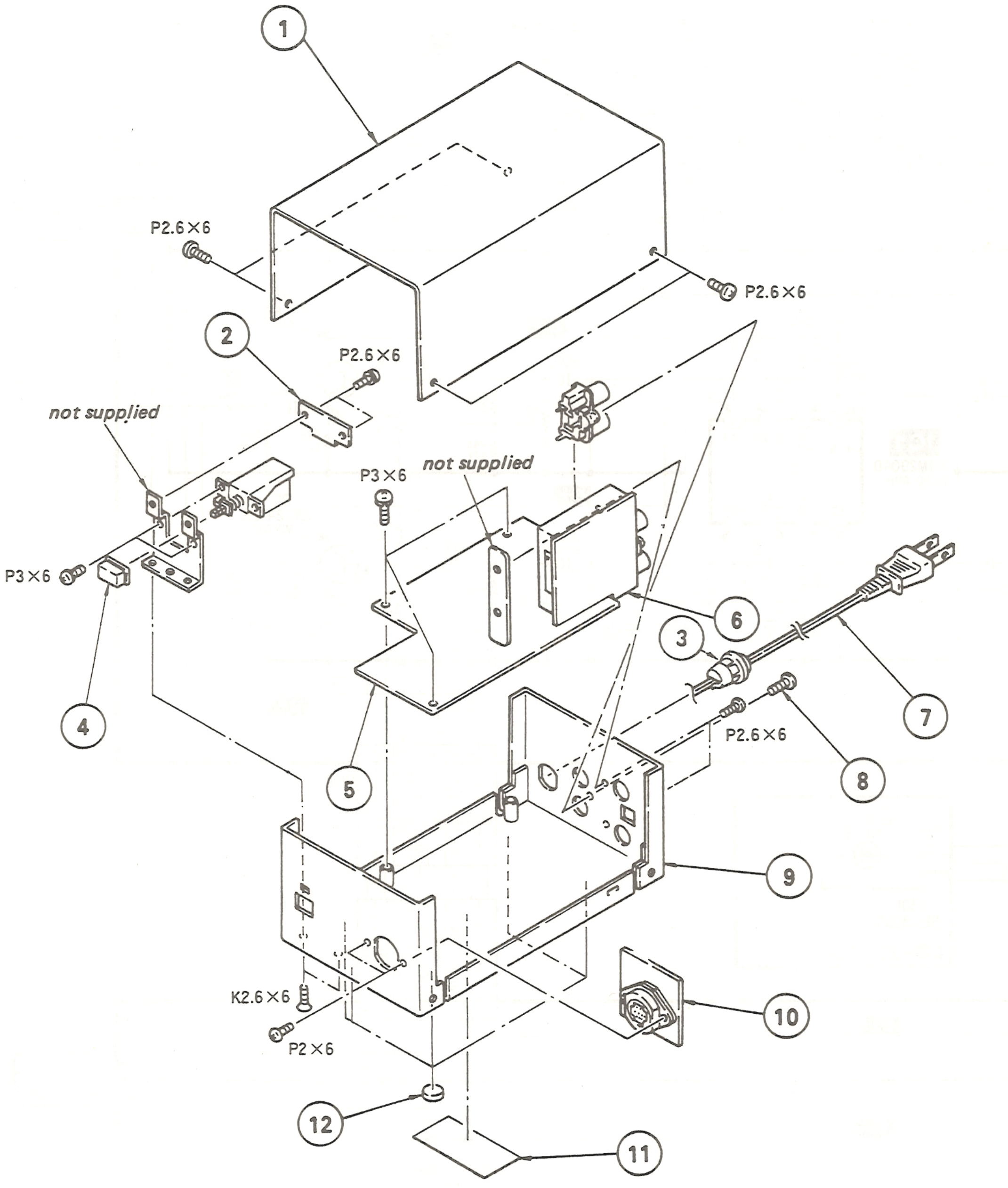
When indicating parts by reference number, please include the board name.

SECTION 4
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



No.	Part No.	Description	Remark
1	*2-399-273-01	CASE, UPPER	
2		LD-21 BOARD	
3	*2-392-799-01	BUSHING, CORD	
4	2-431-686-01	BUTTON (CR-58), SW	
5	*A-6768-173-A	SP-10 BOARD	
6	*A-6768-172-A	AV-7 BOARD, COMPLETE	
7	⚠. 1-551-908-31	CORD, POWER EULO PLUG	
8	4-804-160-21	SCREW, SELF-TAPPING, +B 3x6	
9	X-2399-204-1	CASE ASSY, LOWER	
10		CA-29 BOARD	
11	*2-184-102-01	LABEL, MODEL NUMBER	
12	2-184-104-01	STOPPER	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference frome the original one.
- SEMICONDUCTORS
  In each case, U: μ, for example:
  UA....: μA...., UPA....: μPA....,
  UPB....: μPB...., UPC....: μPC....,
  UPD....: μPD....
- CAPACITORS
  MF: μF, PF: μμF
- COILS
  MMH: mH, UH: μH

Ref.No	Part No.	Description				Remark
	*A-6768-172-A	AV-7 BOARD, COMPLETE **********************				
	*2-399-272-01	CASE, SHIELD				
		CAPACITOR				
C001	1-124-234-00	ELECT	22MF	20%	16V	
C002	1-124-234-00	ELECT	22MF	20%	16V	
C003	1-126-157-11	ELECT	10MF	20%	16V	
C004	1-126-157-11	ELECT	10MF	20%	16V	
C005	1-126-157-11	ELECT	10MF	20%	16V	
C006	1-126-157-11	ELECT	10MF	20%	16V	
C007	1-126-157-11	ELECT	10MF	20%	16V	
C008	1-126-157-11	ELECT	10MF	20%	16V	
C009	1-124-234-00	ELECT	22MF	20%	16V	
C010	1-124-589-11	ELECT	47MF	20%	16V	
C011	1-124-234-00	ELECT	22MF	20%	16V	
C012	1-124-234-00	ELECT	22MF	20%	16V	
C013	1-124-473-11	ELECT	1000MF	20%	10V	
C014	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C015	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C016	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C017	1-124-791-11	ELECT	1MF	20%	50V	
C018	1-124-791-11	ELECT	1MF	20%	50V	
C021	1-163-015-11	CERAMIC CHIP	0.0033MF	10%	50V	
C022	1-163-015-11	CERAMIC CHIP	0.0033MF	10%	50V	
C023	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
		CONNECTOR				
CN001						
CN002						
CN003	1-537-005-11	JACK BOARD				
		IC				
IC001	8-759-700-42	IC NJM2904D				
		JUMPER RESISTOR				
JW001	1-249-997-11	CARBON MELF	0	5%	1/8W	
JW002	1-249-997-11	CARBON MELF	0	5%	1/8W	
JW003	1-249-997-11	CARBON MELF	0	5%	1/8W	
JW004	1-249-997-11	CARBON MELF	0	5%	1/8W	
JW005	1-249-997-11	CARBON MELF	0	5%	1/8W	
		TRANSISTOR				
Q001	8-729-175-71	TRANSISTOR	2SC2757-T32			
Q002	8-729-175-71	TRANSISTOR	2SC2757-T32			
Q003	8-729-271-32	SRANSISTOR	2SC1622A			
Q004	8-729-271-32	TRANSISTOR	2SC1622A			
Q005	8-729-271-32	TRANSISTOR	2SC1622A			
		RESISTOR				
R001	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R002	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R003	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R004	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R005	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R006	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R007	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R008	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R009	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R010	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R011	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R012	1-216-171-00	METAL GLAZE	75	5%	1/8W	
R013	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R014	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R015	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R016	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R017	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R018	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R019	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R020	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R021	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R022	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R023	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R024	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R025	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R026	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R027	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R028	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R029	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R030	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R031	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R032	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R033	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R034	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R035	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R036	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R037	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R038	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R039	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R040	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R041	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R042	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R043	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
		VARIABLE RESISTOR				
RV001	1-228-989-00	RES, ADJ, CARBON 470				
***************						
	*A-6768-173-A	SP-10 BOARD, COMPLETE **********************				
		JACK				
J201	1-565-841-11	JACK, PIN 2P				

Ref.No	Part No.	Description				Remark
		CAPACITOR				
C101	⚠.1-136-937-11	FILM	0.22MF	20%	250V	
C102	⚠.1-164-246-11	CERAMIC	0.0022MF	20%	400V	
C103	⚠.1-164-246-11	CERAMIC	0.0022MF	20%	400V	
C104	⚠.1-128-067-11	ELECT	22MF	20%	400V	
C105	⚠.1-136-752-11	FILM	0.01MF	0	630V	
C201	1-124-943-11	ELECT	39MF	20%	25V	
C202	1-126-613-51	ELECT	10MF	20%	50V	
C203	⚠.1-124-559-51	ELECT	1000MF	20%	10V	
C204	⚠.1-124-559-51	ELECT	1000MF	20%	10V	
C205	1-124-791-11	ELECT	1MF	20%	50V	
		DIODE				
D101	8-719-510-06	DIODE S1WB60				
D102	8-719-980-47	DIODE PC101				
D201	8-719-907-40	DIODE ERB43-08				
D202	8-719-981-00	DIODE ERB81-004				
D204	8-719-200-82	DIODE 11ES2				
D205	8-719-200-82	DIODE 11ES2				
D206	8-719-114-87	DIODE RD18JSB2				
D207	8-719-107-87	DIODE 03P2M				
		FUSE				
F101	⚠.1-576-114-11	FUSE				
		IC				
IC101	⚠.8-759-995-07	IC MA1040				
IC201	⚠.8-759-982-26	IC TA78L012AP				
IC202	8-759-908-15	IC TL431CLP				
		COIL				
L101	⚠.1-424-362-11	FILTER, LINE				
L201	⚠.1-413-372-11	COIL, REGULATOR				
		RESISTOR				
R101	⚠.1-215-904-11	METAL OXIDE	100K	5%	2W	F
R102	⚠.1-205-964-11	WIREWOUND	5.6		2W	
R103	⚠.1-214-844-00	METAL	150	1%	1/2W	
R104	⚠.1-214-844-00	METAL	150	1%	1/2W	
R105	⚠.1-249-417-11	CARBON	1K	5%	1/4W	F
R106	1-260-040-11	CARBON	470K	5%	1/2W	
R201	1-249-407-11	CARBON	150	5%	1/4W	
R202	1-249-423-11	CARBON	3.3K	5%	1/4W	
R203	1-249-419-11	CARBON	1.5K	5%	1/4W	
R204	1-247-745-11	CARBON	330	5%	1/2W	
R206	1-260-040-11	CARBON	470	5%	1/4W	
R207	1-260-040-11	CARBON	470	5%	1/4W	

Ref.No	Part No.	Description				Remark
		VARIABLE RESISTOR				
RV201	1-224-247-XX	RES, ADJ, METAL GLAZE 100				
		TRANSFORMER				
T101	⚠.1-450-048-11	TRANSFORMER, CONVERTER				

****

LD-21 BOARD
****

		DIODE				
D301	8-719-955-32	DIODE PG5531KX				
		RESISTOR				
R301	1-249-413-11	CARBON	470	5%	1/4W	

****

CA-29 BOARD
****

	1-562-952-11	CONNECTOR 12P

****

MISCELLANEOUS
****

	⚠.1-551-908-31	CORD, POWER, EULO PLUG
S101	⚠. - - -	SWITCH, PUSH (AC POWER)(1 KEY)

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
X-2399-204-1	CASE ASSY, LOWER	
*2-399-273-01	CASE, UPPER	
*2-399-276-02	INDIVIDUAL CARTON	
2-399-278-01	PLATE, PROTECTION	
3-786-065-11	MANUAL, INSTRUCTION	

****

HARDWARE LIST
****

SCREW

4-804-160-21	SCREW, SELF-TAPPING, +B 3X6
7-621-255-40	SCREW +P 2X6
7-621-773-95	SCREW +P 2.6X6
7-628-254-10	SCREW +PS 2.6X6
7-682-547-04	SCREW +P 3X6

****

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
ELECTRICAL ADJUSTMENTS

5-1. DC VOLTAGE ADJUSTMENT (SP-10 board)

Measuring point	D204 (anode)
Measuring instrument	Digital Voltmater
Adjustment element	RV201
Specification	6.8V

〔Adjustment Method〕

1. Adjust to 6.8V with RV201.

SP-10 BOARD (COMPONENT SIDE)

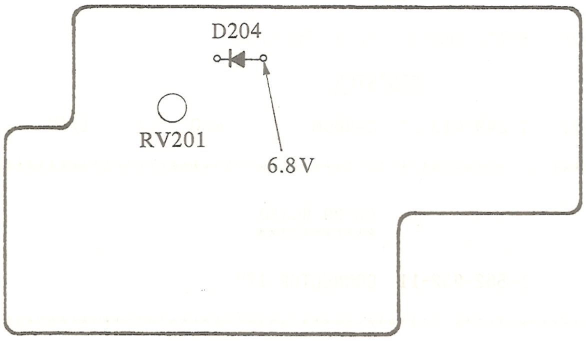


Figure 1

5-2. OUTPUT LEVEL ADJUSTMENT (AV-7 board)

Signal	pattern generator (CN1 pin ①)
Measuring point	CN3 (VIDEO OUT)
Measuring instrument	Oscilloscope
Adjustment element	RV1
Specification	1.0 Vp-p

〔Adjustment Method〕

1. VIDEO IN CN1 pin ① for the video input colour-bar signal.
2. VIDEO OUT CN3 should be terminated with a 75 Ω load.
   Adjust output level to 1 Vp-p with RV1.

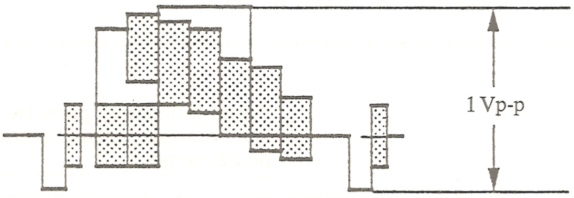


Figure 2

AV-7 BOARD (COMPONENT SIDE)

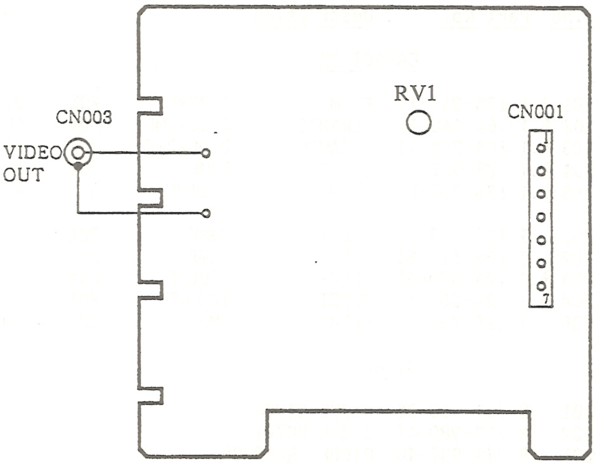


Figure 3

English
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